



TRANSMISSION
SERVICE MANUAL

Y43340D

Y43290D

Y43370D

Okamura Corporation

Jan. 2020

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PARTS LIST

Note.

Illustrations and photographs can be different from the actual parts.

The unit of length is mm.

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Technical data

Specification

Torque converter

Torque converter Type		3-Element 1-Stage 2-Phase
Converter-out pressure	MPa	max 0.4
Circular flow	ℓ/min	15~19
Input rotation		Clockwise viewed from engine
Max input speed	rpm	2700

Transmission

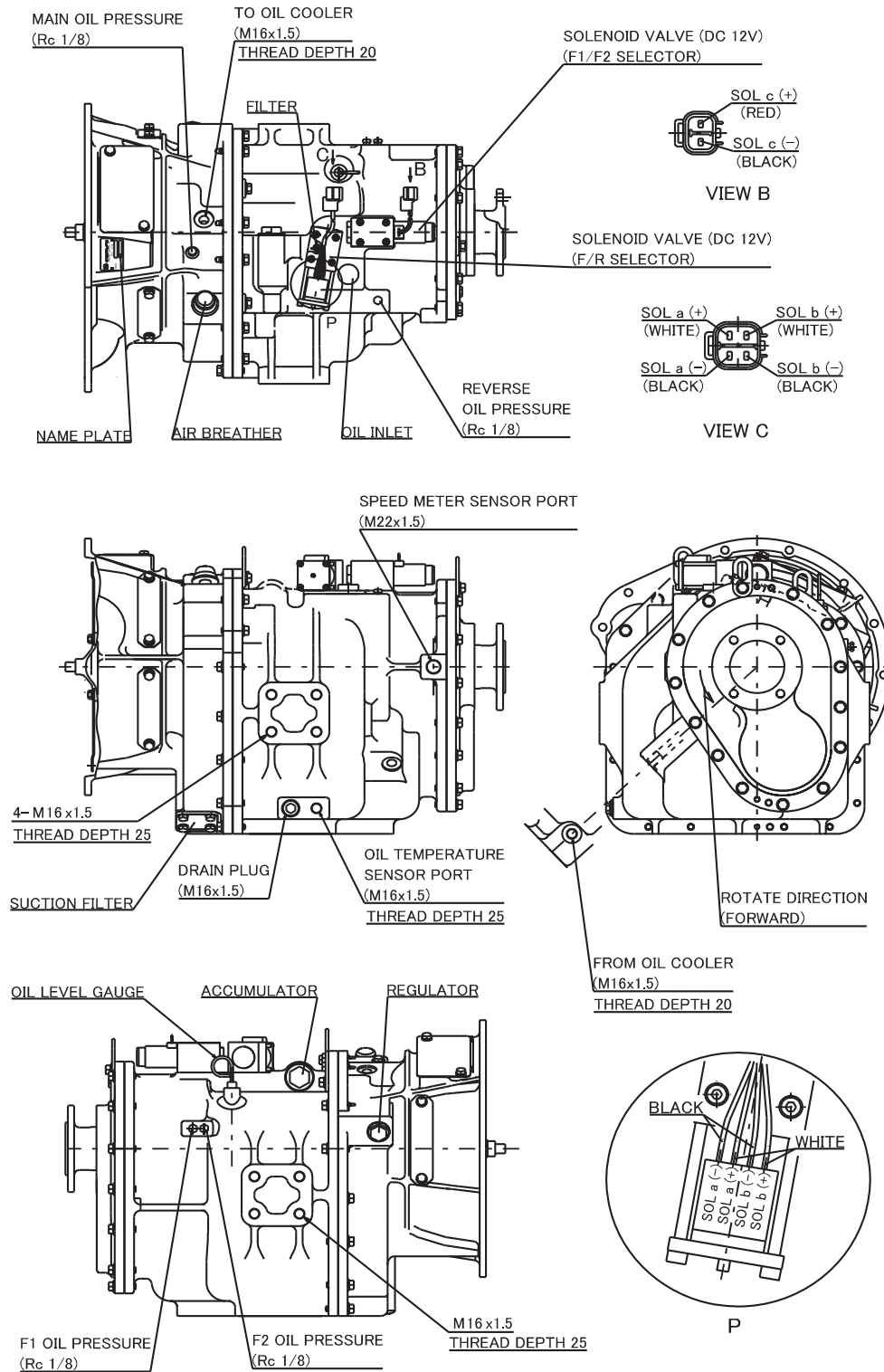
Model		Y43340D	Y43290D	Y43370D
Gear ratio	Forward 1	2.91	3.07	3.57
	Forward 2	1.56	2.13	1.78
	Reverse	2.23	2.40	2.73
Clutch	Type	Wet multiple clutch plates		
	Main oil pressure	MPa	1.0±0.2	
	F1 oil pressure	MPa	1.0±0.2	
	F2 oil pressure	MPa	1.0±0.2	
	R oil pressure	MPa	1.0±0.2	
Control type		Power shift		
Output rotation	Forward	Counterclockwise viewed from output		
	Reverse	Clockwise viewed from output		

Transmission ASSY

Mass (Dry)	kg	190
Oil type		ATF DEXRON II
Oil capacity	ℓ	9
Max oil temperature	°C	120
Others		-

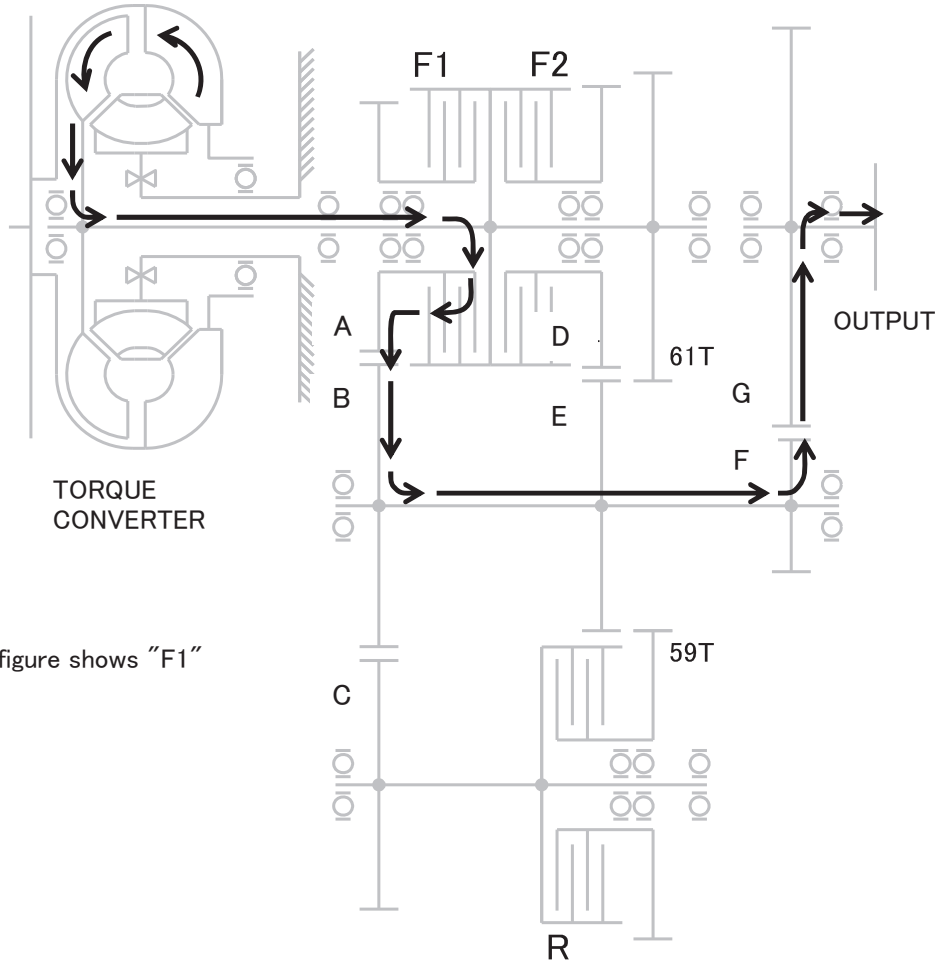
Description and operation

Transmission



Transmission power flow

Forward



This figure shows "F1"

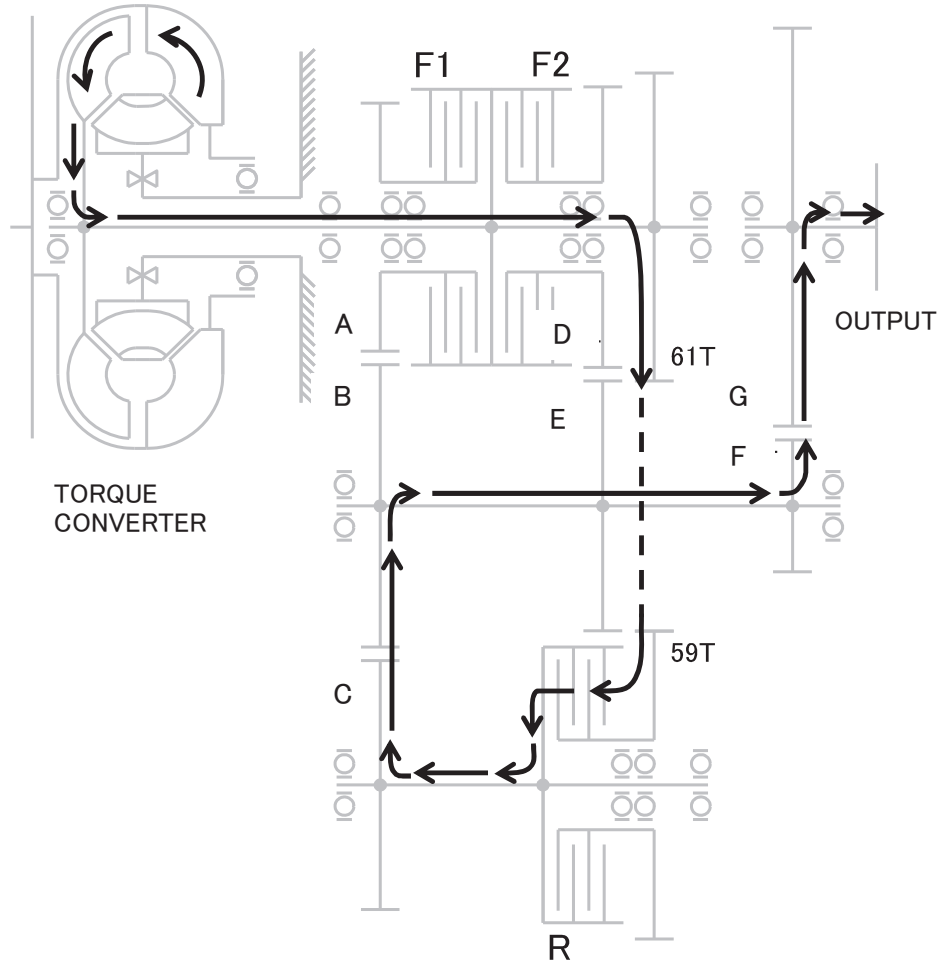
Transmission of power from the turbine

("()") shows the numbers of gear teeth. "[]" shows "F2".)

Turbine → Main shaft → Clutch gear (A[D]) →
 Counter gear (B[E]) → Counter shaft → Counter gear(F) →
 Output gear (G) → Output shaft

MODEL	A	B	C	D	E	F	G
Y43340D	42T	69T	53T	59T	52T	40T	71T
Y43290D	46T	65T	57T	56T	55T	35T	76T
Y43370D	42T	69T	53T	61T	50T	35T	76T

Reverse



Transmission of power from the turbine

("(") shows the numbers of gear teeth.)

Turbine → Main shaft → Counter gear (61) →
 Clutch gear (59) → Counter gear (C) →
 Counter gear (B) → Counter shaft → Counter gear (F) →
 Output gear (G) → Output shaft

MODEL	A	B	C	D	E	F	G
Y43340D	42T	69T	53T	59T	52T	40T	71T
Y43290D	46T	65T	57T	56T	55T	35T	76T
Y43370D	42T	69T	53T	61T	50T	35T	76T

Hydraulic system

The hydraulic system, which is located in the upper section of the transmission case, comprises a regulator valve, an accumulator valve and a solenoid valve.

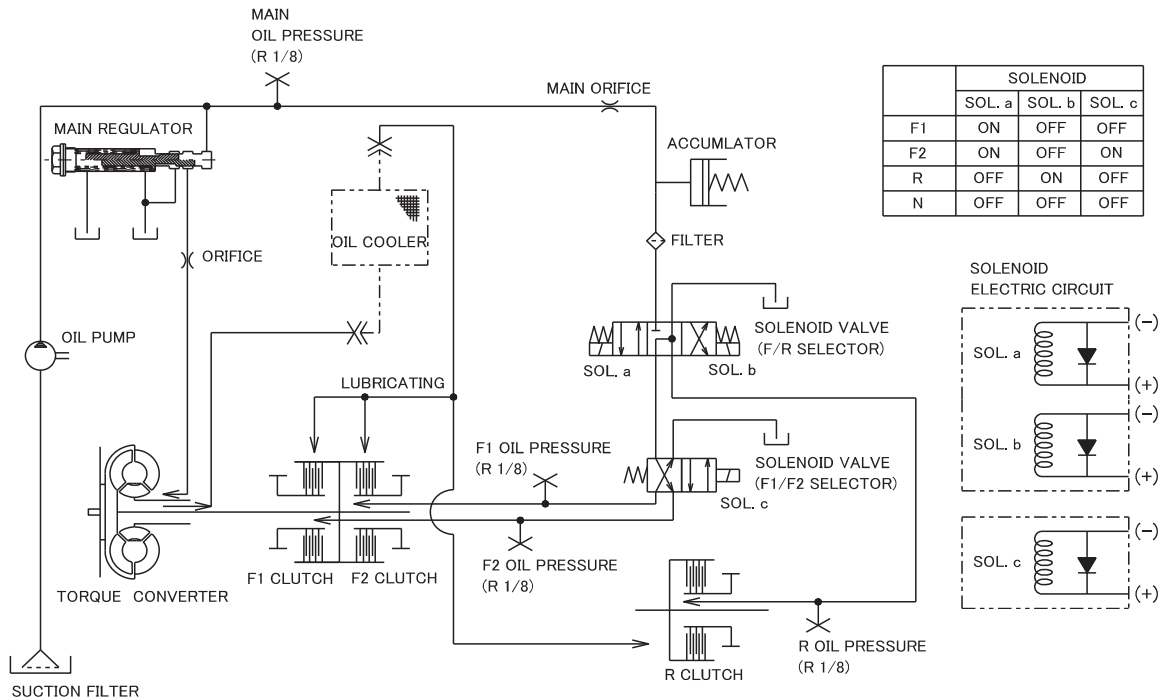
When the engine is started, the oil pump will suck up oil from the transmission sump through the oil screen and supply it to the regulator valve which regulates the pressure to 0.8 to 1.2 MPa. The oil then will go through the accumulator valve to the solenoid valve.

When the solenoid valve opens the circuit, the pressure oil will go through the oil path in the case and the shaft hole to the clutches and engage the driven plate with the clutch plate.

The clutch hydraulic pressure is increased gradually by the accumulator valve to provide smoother clutch engagement.

The circulation oil for the torque converter will be restricted by the orifice of the regulator valve before entering the torque converter.

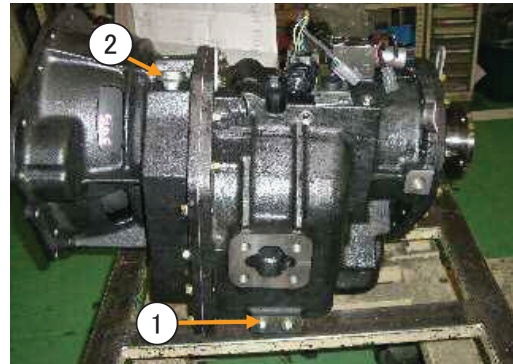
The oil discharged from the torque converter will be directed into the transmission lubrication circuit through the oil cooler and be used to cool and lubricate the transmission components.



Disassembly of transmission

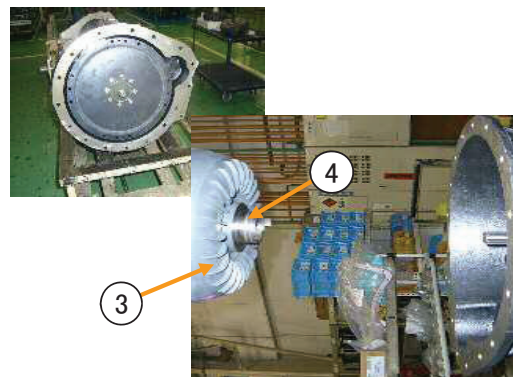
- 1 Remove the drain plug ① and drain oil in transmission.

Remove the air breather ②.



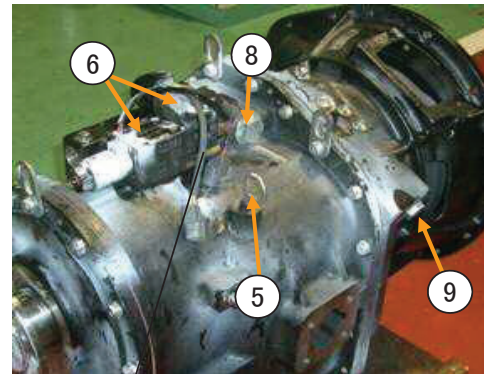
- 2 Pull the torque converter ③, and remove the seal ring ④.

Note that oil comes out from the torque converter.



- 3 Remove the oil level gauge ⑤.

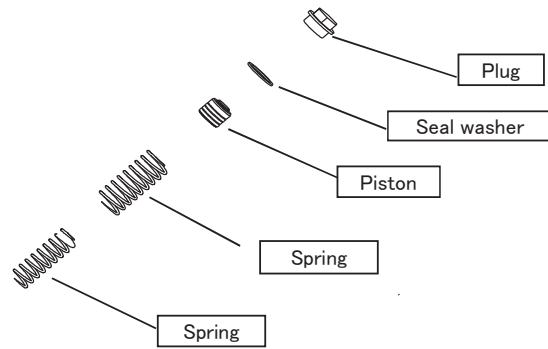
Remove two solenoid valves ⑥, and remove the coin filter ⑦ and the O-ring.



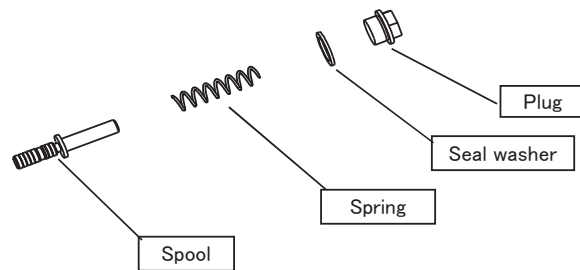
- 4 Remove the accumulator ⑧ and the regulator ⑨.



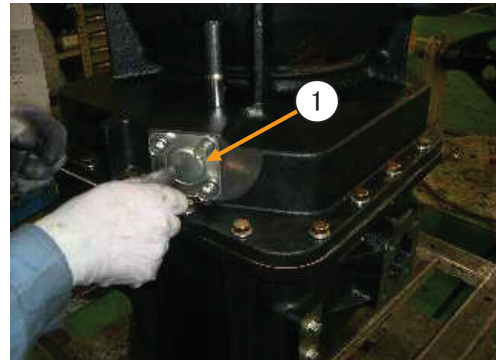
Accumulator valve



Regulator valve



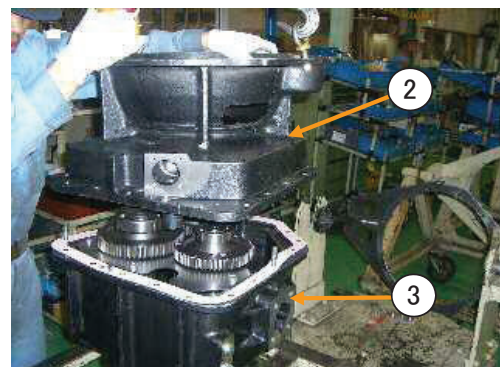
- 1 Remove the suction strainer ① and the gasket.



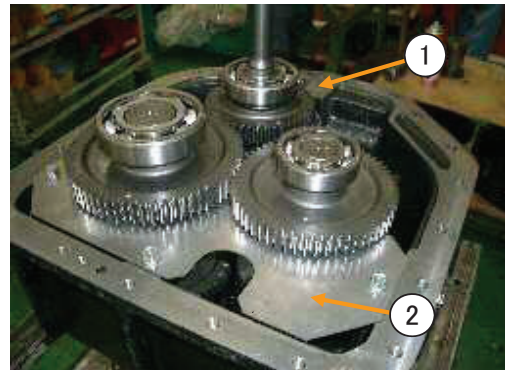
- 2 Unscrew the bolts fixing the torque converter case ② and the transmission case ③.

Hang the converter case to a hoist to separate it from the transmission case.

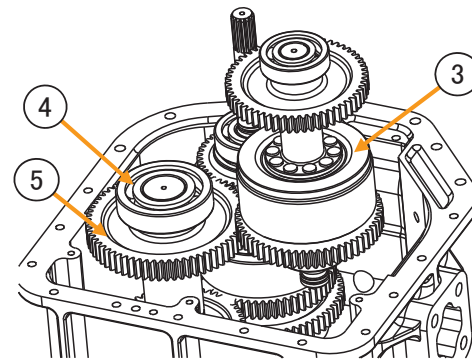
Remove the gasket.



- 1 Remove the orifice ①, the gear cover ② and two magnets.



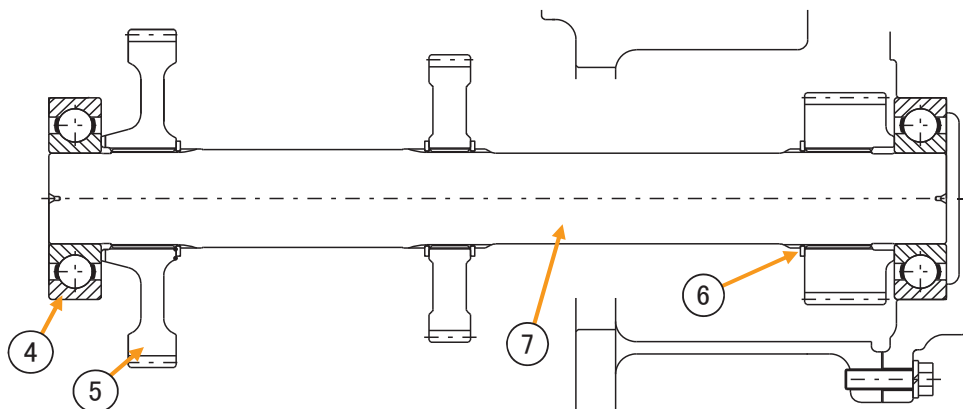
- 2 Remove the Reverse clutch ASSY ③.



- 3 Remove the bearing ④, and remove the counter gear ⑤.

Remove the snap ring ⑥, and remove the counter shaft ⑦.

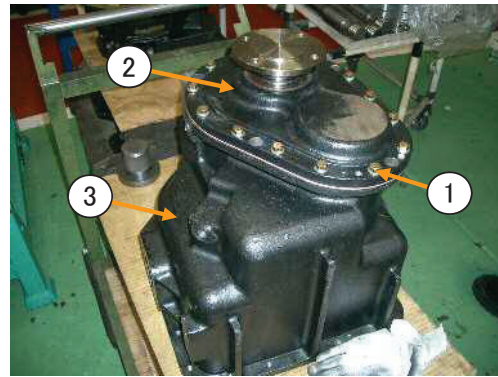
Remove the Forward clutch ASSY.



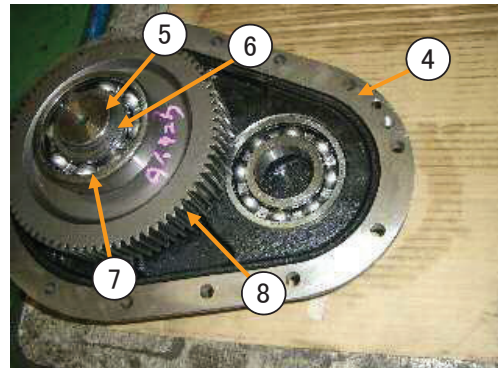
- 1 Let the transmission case turn over.

Unscrew the bolts ① fixing the rear cover ② and the transmission case ③. And remove the rear cover ASSY ④.

Remove the gasket.

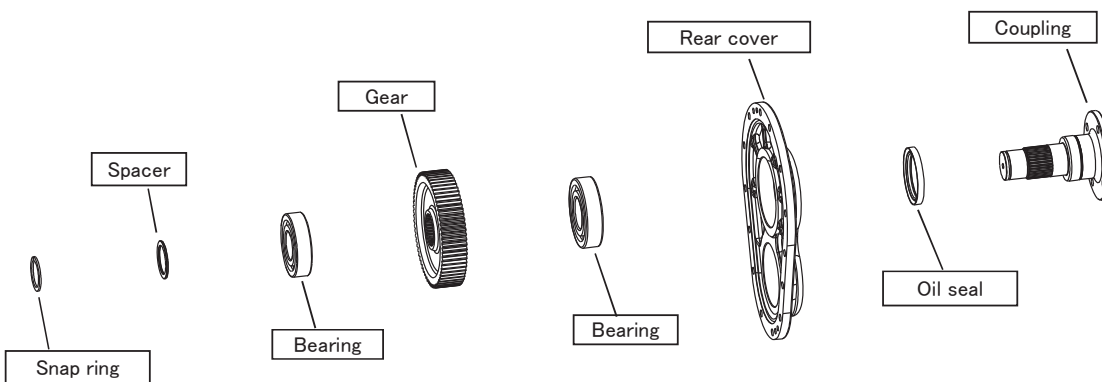
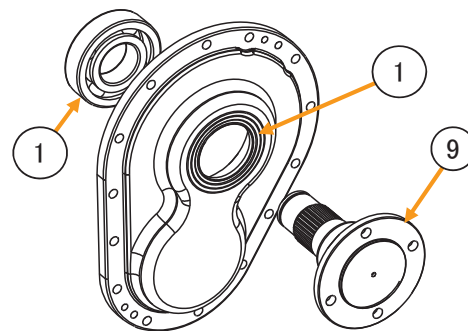


- 2 Remove the snap ring ⑤, the spacer ⑥, bearing ⑦ and the output gear ⑧

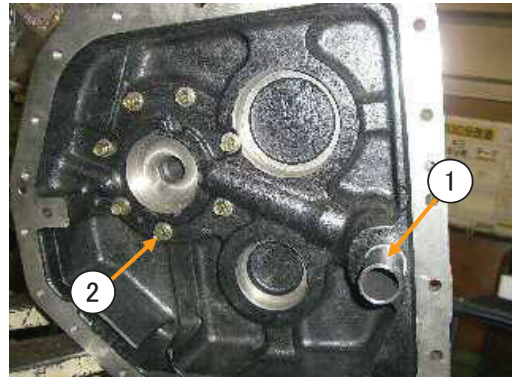


- 3 Remove the coupling ⑨ and the bearing ⑩.

Remove the oil seal ⑪.

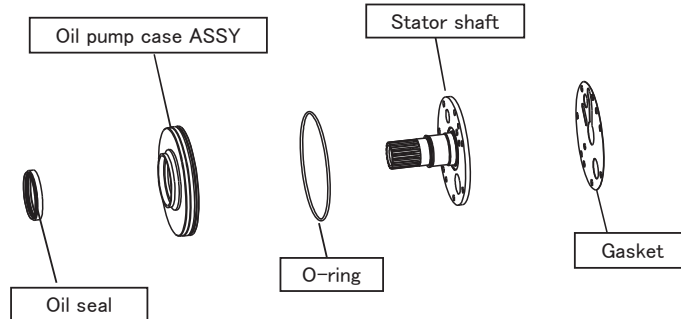
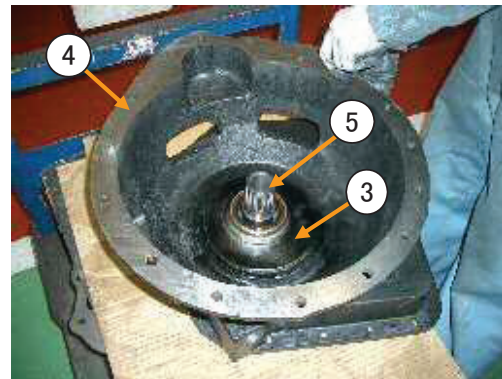


- 1 Remove the nipple ①.



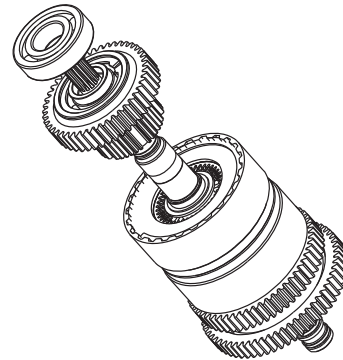
- 2 Unscrew the bolts ② fixing the oil pump case ASSY ③ and the T/C case ④. And remove the oil pump case ASSY with the stator shaft ⑤.

Remove the oil seal from the oil pump case.

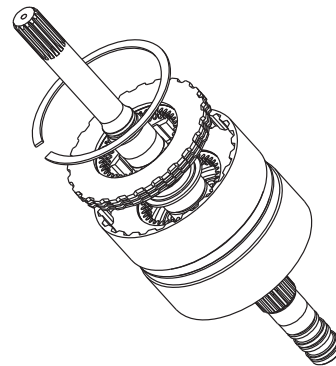


Disassembly of clutch pack

- 1 Remove seal rings, and using a puller, remove the bearing and the clutch gear.

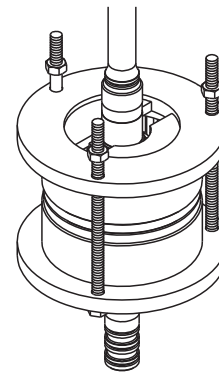


- 2 Remove the snap ring and plates.

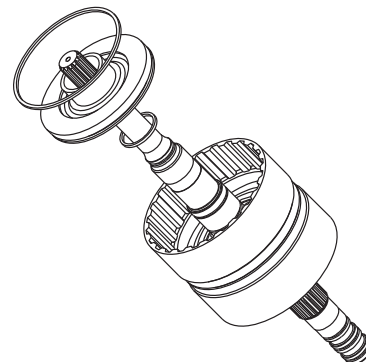


- 3 Using a special tool, compress the clutch spring, and remove the snap ring.

Special tool	SST1
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- 4 Remove the clutch piston.
Remove piston rings from the clutch piston and the shaft.

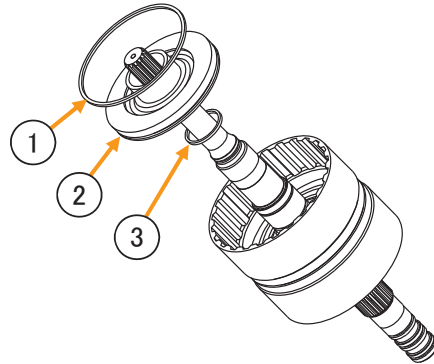


Reassembly of clutch pack

Refer to the following page.

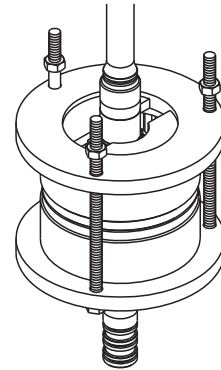
- 1 Install the piston ring ① to the clutch piston ②.

Install the piston ring ③ to the shaft, and install the clutch piston with the piston ring.

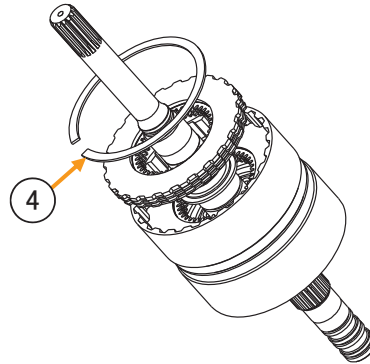


- 2 To install the snap ring, compress the clutch spring with a special tool.

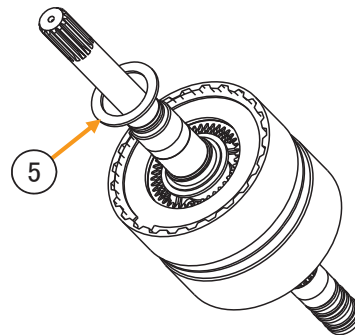
Special tool	SST1
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- 3 Install clutch plates, driven plates, the camber plate, the pressure plate and the snap ring ④.



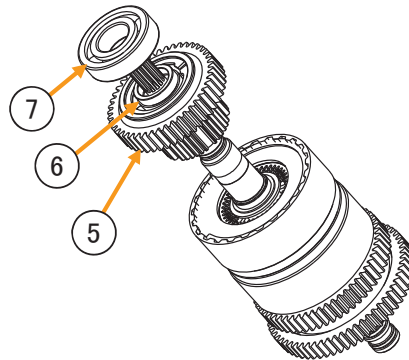
- 4 Install the spacer ⑤.



- Using a special tool, press the clutch gear with the bearing and the snap ring (5), and install the spacer (6).

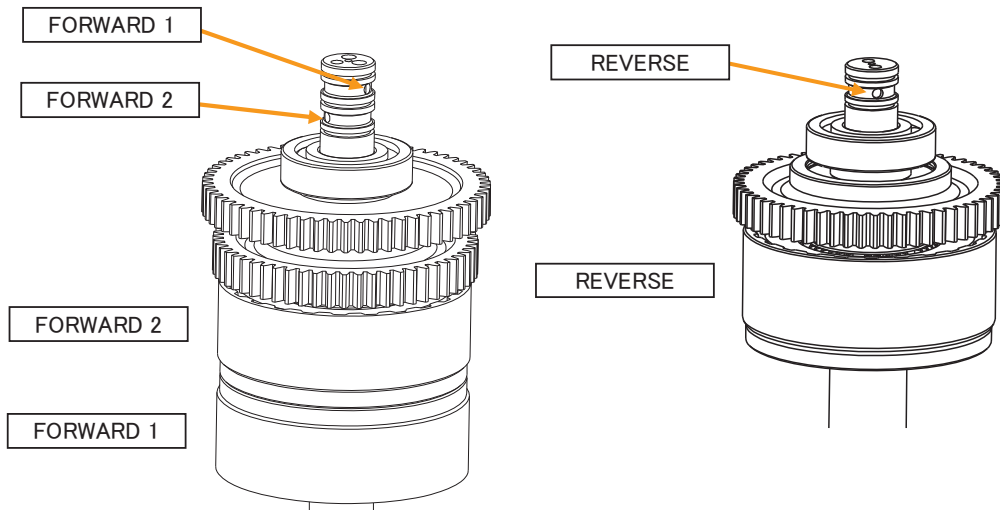
Be careful not to damage teeth of the clutch plate.

Using a special tool, press the bearing (7).



Special tool	SST2
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- Apply air to the clutch piston through oil hole to make sure that the piston moves freely.



- Install seal rings.

Forward clutch pack

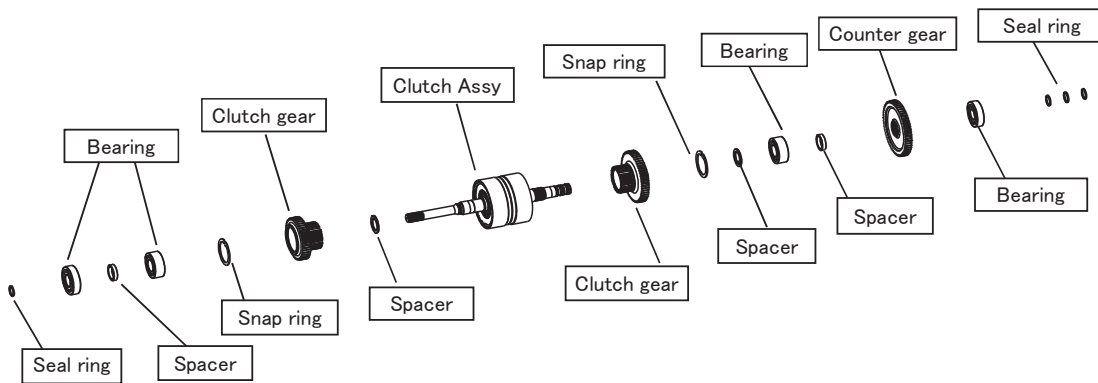
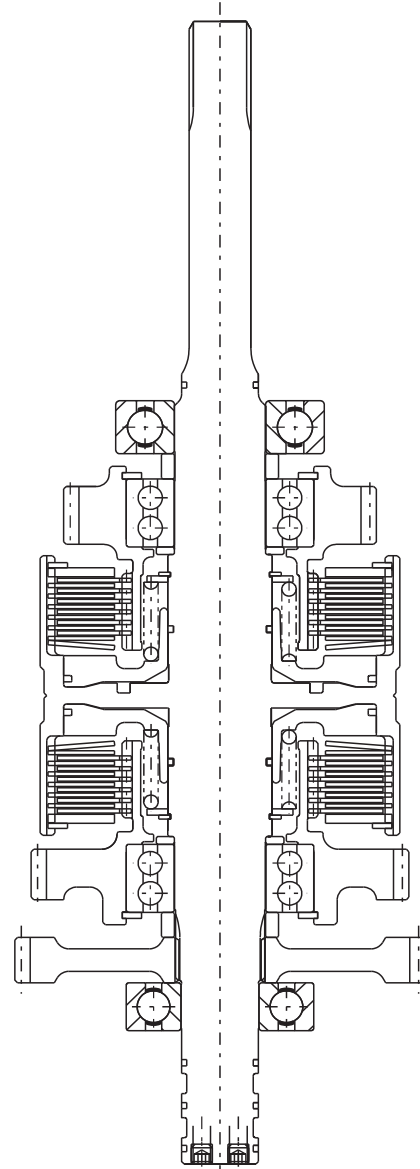
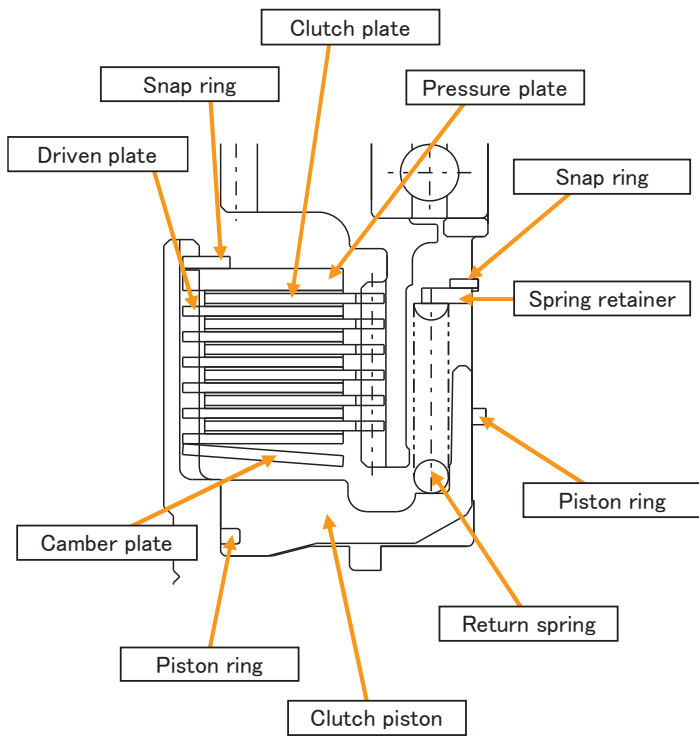
Installing plate

- 1) Make sure that the combination and number of plates are correct.

Number of plates

Clutch plate	6
Driven plate	6

- 2) Install the camber plate by setting its inside face against the driven plate.



Reverse clutch pack

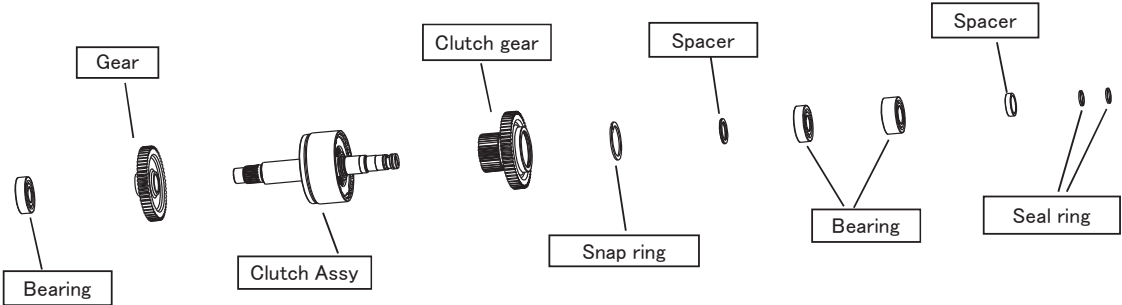
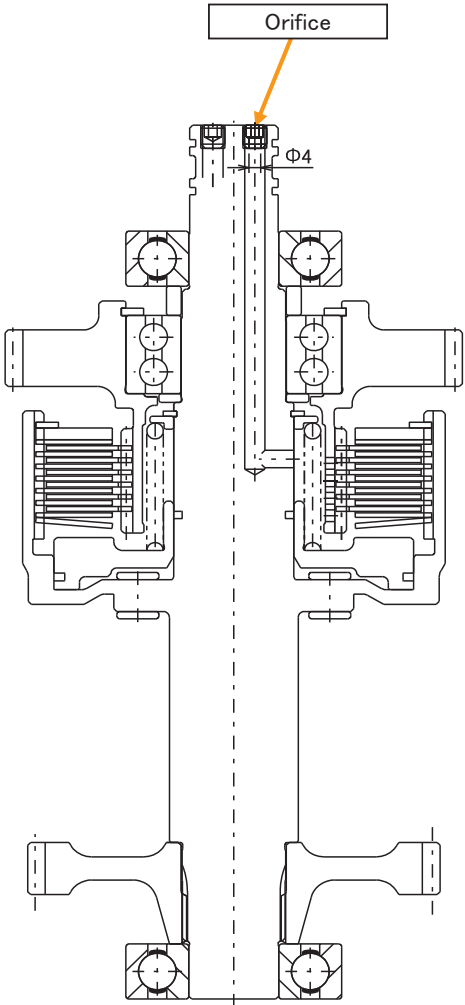
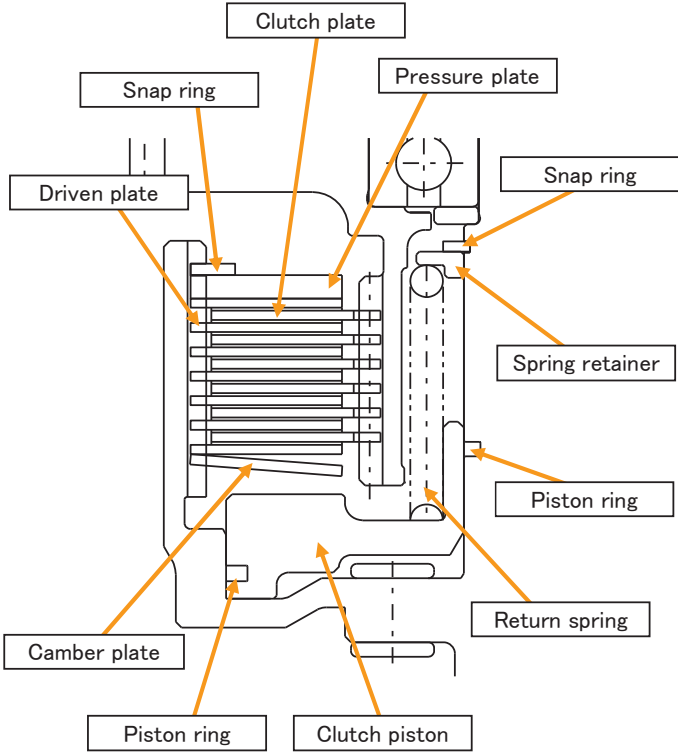
Installing plate

- 1) Make sure that the combination and number of plates are correct.

Number of plates

Clutch plate	6
Driven plate	7

- 2) Install the camber plate by setting its inside face against the driven plate.

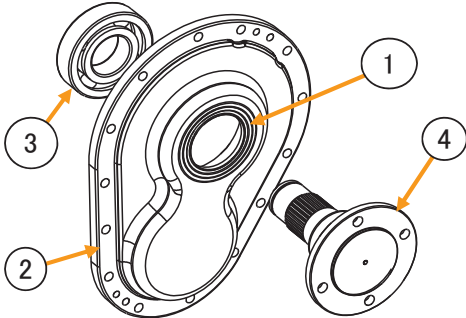


Reassembly of transmission

- 1 Apply ThreeBond No.1102 to the outer side of the oil seal ①, and using a special tool, install the oil seal to the rear cover ②. And install the bearing ③ and the coupling ④.

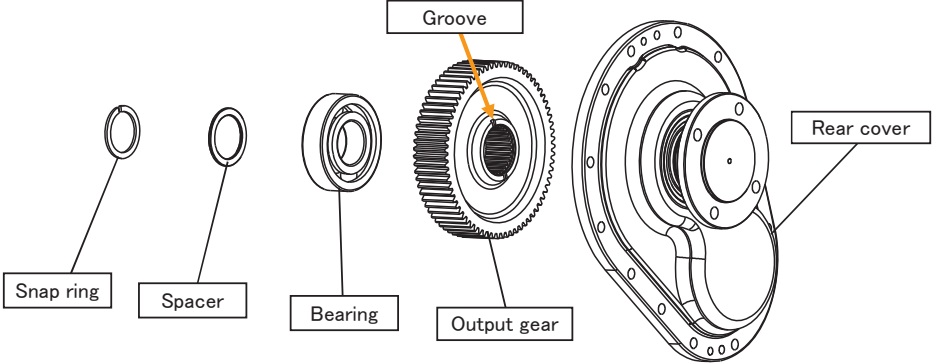
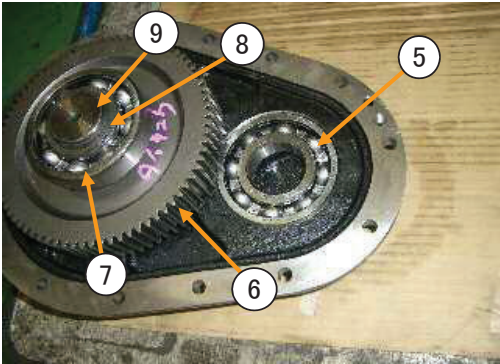
Be careful not to damage a lip of the oil seal.

Sealant	ThreeBond No.1102
Special tool	SST3



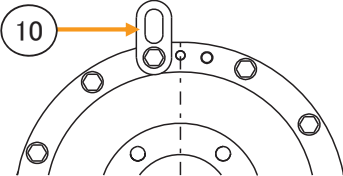
- 2 Install the bearing ⑤ to the rear cover. And install the output gear ⑥, the bearing ⑦, the spacer ⑧ and the snap ring ⑨.

Be careful so that the groove of the output gear becomes the coupling side.



- 3 Install the gasket.
- Install the rear cover ASSY and the eye plate ⑩.

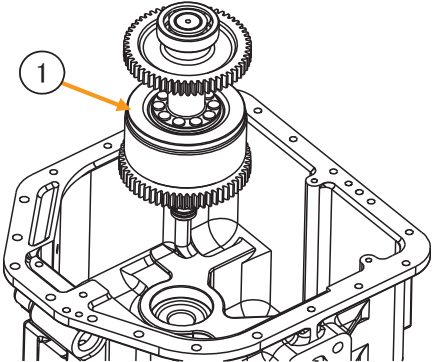
Tightening Torque	39.2 to 49.1 Nm
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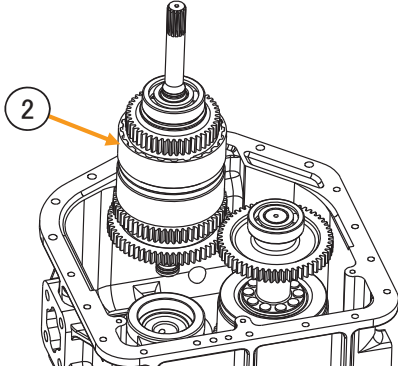
1 Turn over the transmission case.



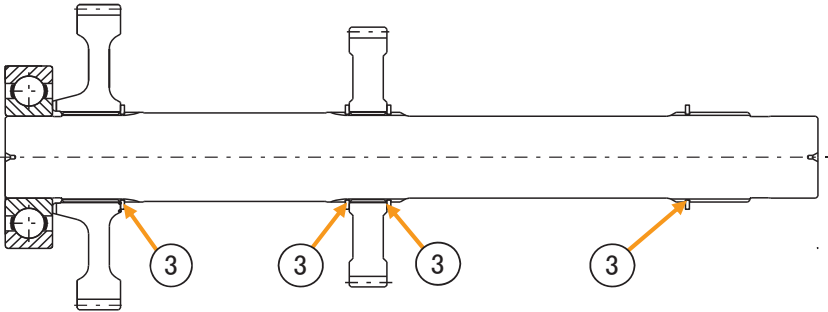
2 Install the Reverse clutch ASSY ①.
Be careful not to damage the seal ring.



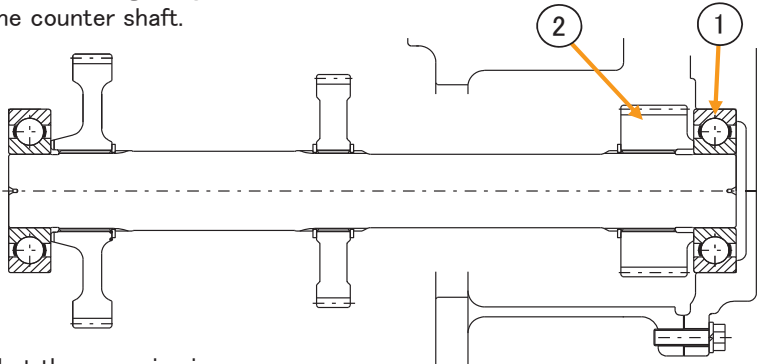
3 Install the Forward clutch ASSY ②.
Be careful not to damage the seal ring.



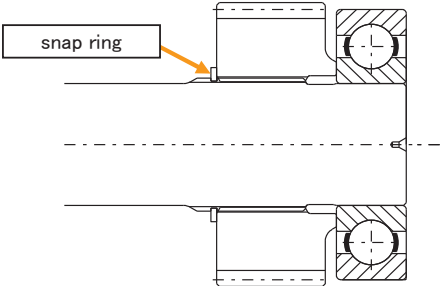
4 Install the snap ring ③ and the bearing.



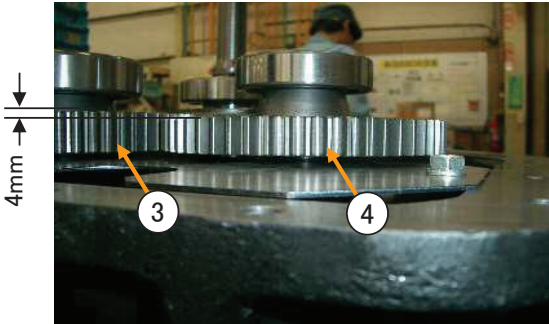
- 1 Put the bearing ① and the counter gear ② in the case, and install the counter shaft.



Install while confirming that the snap ring is not deformed.

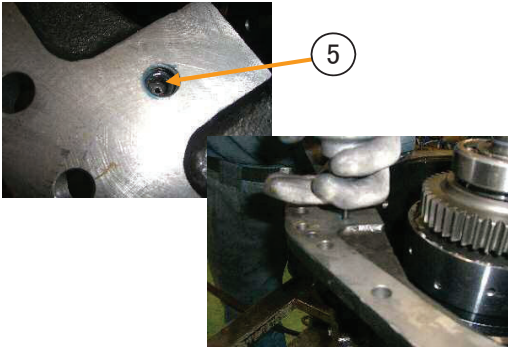


After installing, check that the height between the counter gear ③ and the counter gear ④ is about 4mm.



- 3 Apply LOCTITE No.242 to the orifice ⑤, and install it.

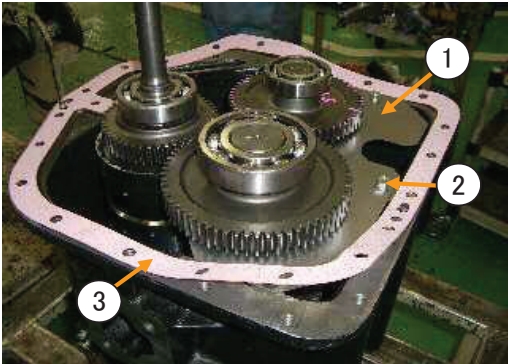
Adhesive	LOCTITE No.242
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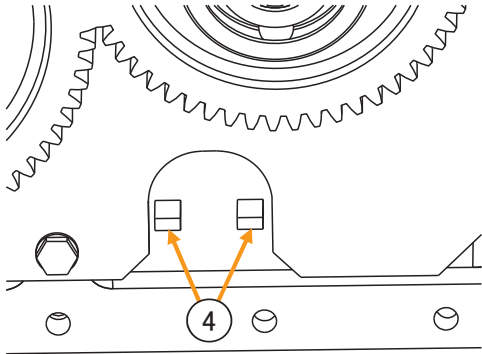
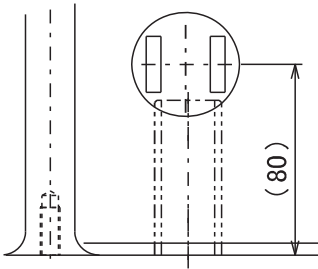
- 1 Install the gear cover ①, apply LOCTITE No.262 to the bolts ②, and tighten the bolts.

Install the gasket ③.

Adhesive	LOCTITE No.262
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- 2 Install two magnets ④.

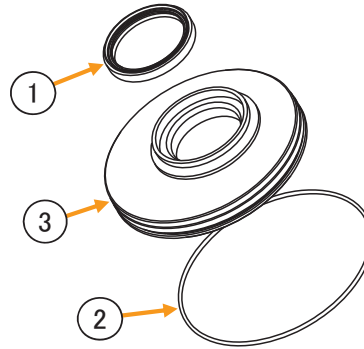


- 1 Apply ThreeBond No.1102 to the outer side of the oil seal ①, and using a special tool, install the oil seal. And install the O-ring ② to the oil pump case ③.

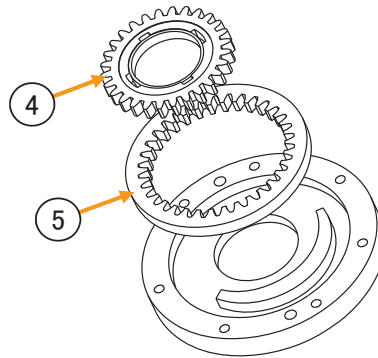
Be careful not to damage a lip of the oil seal.

Sealant	ThreeBond No.1102
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Special tool	SST3
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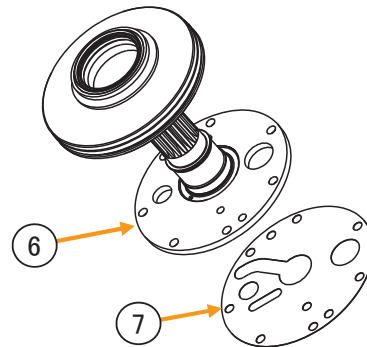


- 2 Install the oil pump drive gear ④ and the oil pump driven gear ⑤ to the oil pump case.



- 3 Install the stator shaft ⑥ and the gasket ⑦ to the oil pump case with the oil pump gear and the oil pump driven gear.

Be careful that the oil pump drive gear and the oil pump driven gear don't come off.

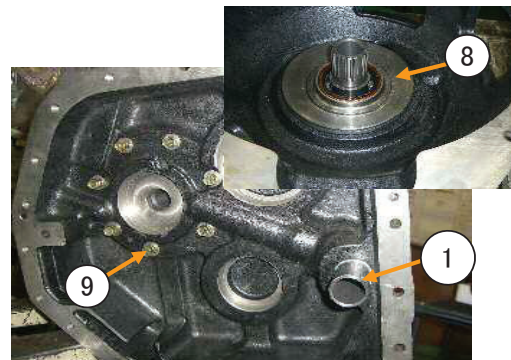


- 4 Install the oil pump ASSY with the stator shaft and the gasket ⑧ to the T/C case, and tighten the bolts ⑨.

Apply LOCTITE No.572 to the nipple ⑩, and install it.

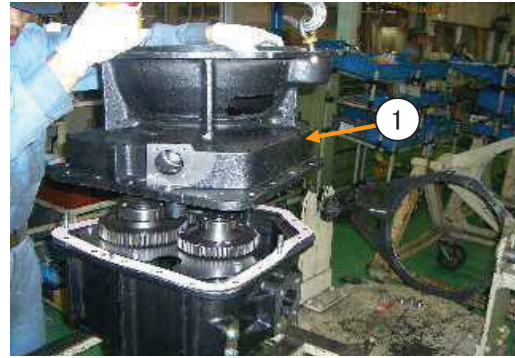
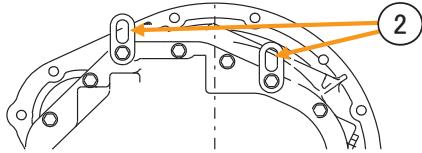
Sealant	LOCTITE No.572
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Tightening Torque	18.6 to 24.5 Nm
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- 1 Hang the converter case ① to a hoist, and lower the case onto the converter case by aligning the input shaft with the transmission. And tighten the bolts, and install the eye plates ②.

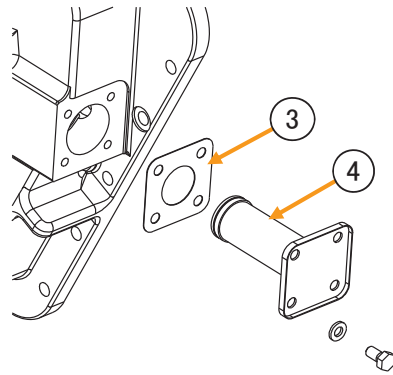
Tightening Torque	39.2 to 49.1 Nm
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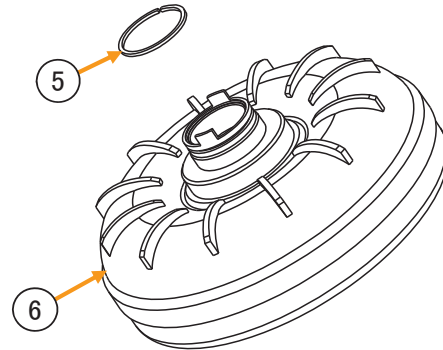
- 2 After applying LOCTITE No.572 to both sides of the gasket ③, install the suction strainer ④.

Sealant	LOCTITE No.572
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Tightening Torque	18.6 to 24.5 Nm
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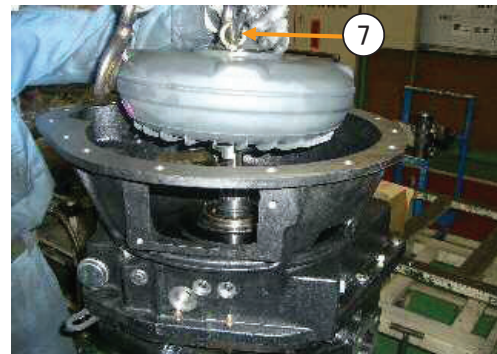
- 3 Install the seal ring ⑤ to the torque converter ASSY ⑥.



- 4 Fix two eyebolts (SST4) ⑦ on the torque converter ASSY ⑥, and install the torque converter ASSY.

Be careful not to damage a lip of the oil seal and the seal ring.

Special tool	SST4
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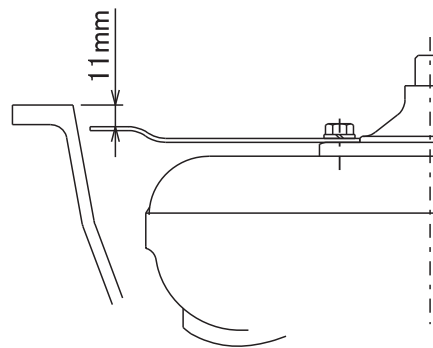
- 1 Install the flexible plate ①.

Be careful to the direction.

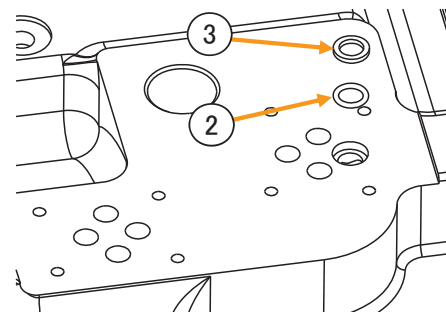
Tightening Torque	18.6 to 24.5 Nm
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After installing, check that the height of between the flexible plate and the T/C case is about 11mm.

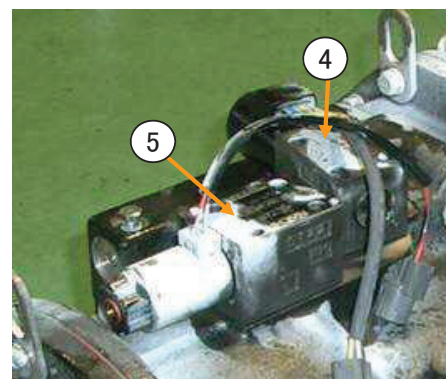


- 2 Install the O-ring ② and the coin filter ③.

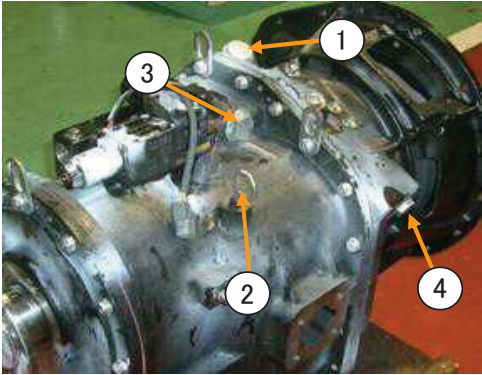


- 3 Install two solenoid valves ④⑤.

Tightening Torque	4.9 to 7.8 Nm
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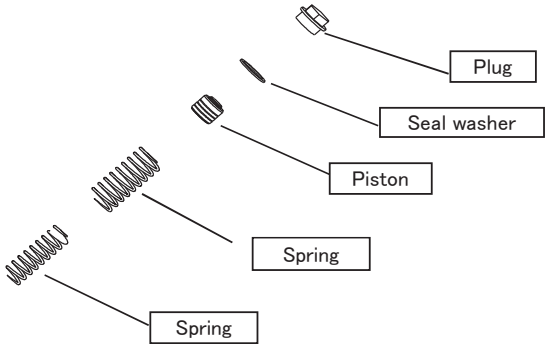


1 Install the air breather ① and the oil level gauge ②.



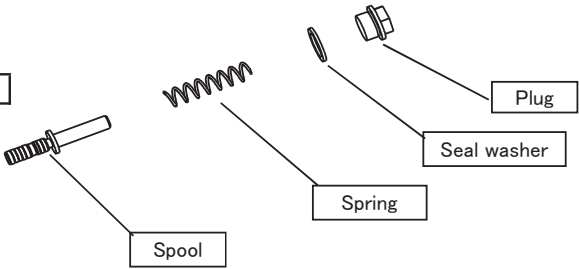
2 Install the accumulator ③.

Tightening Torque 108 to 127 Nm



3 Install the regulator ④.

Tightening Torque 40.9 to 50.6 Nm

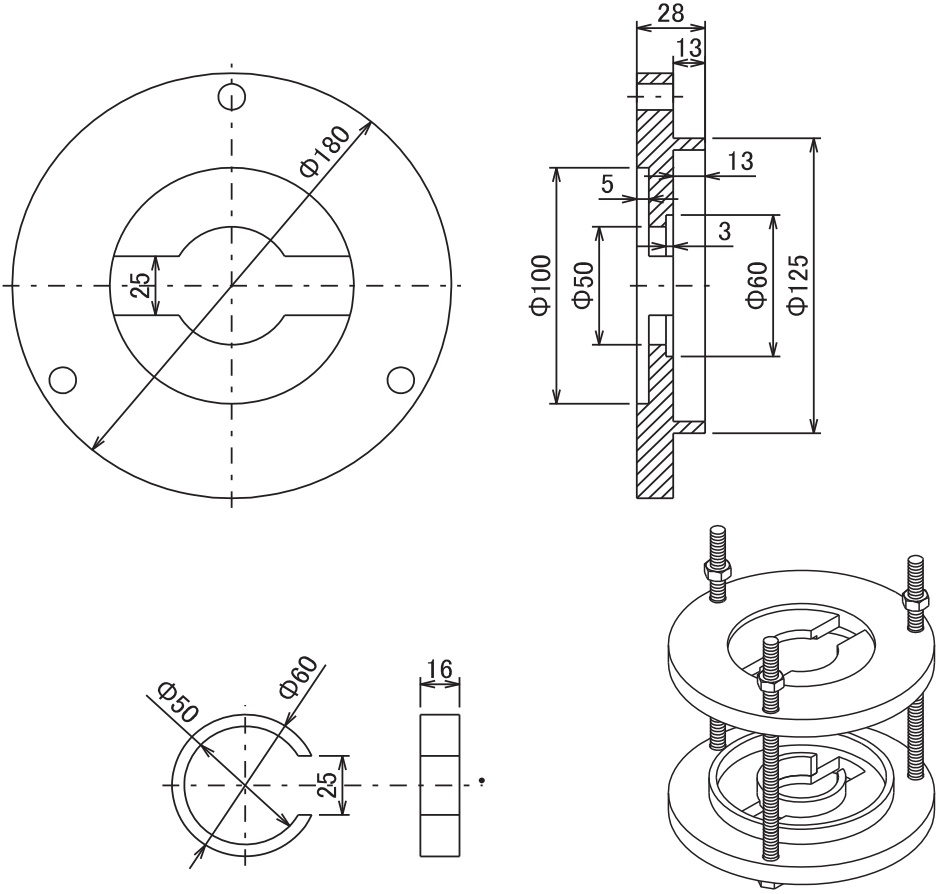


4 Reassembly is over.

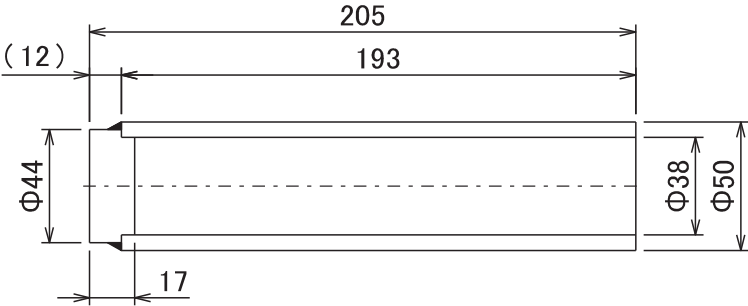


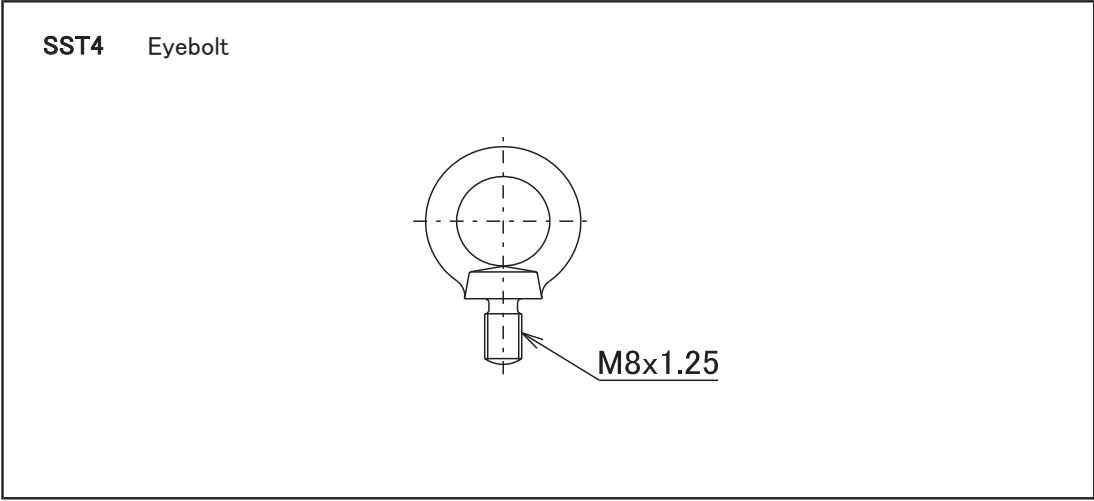
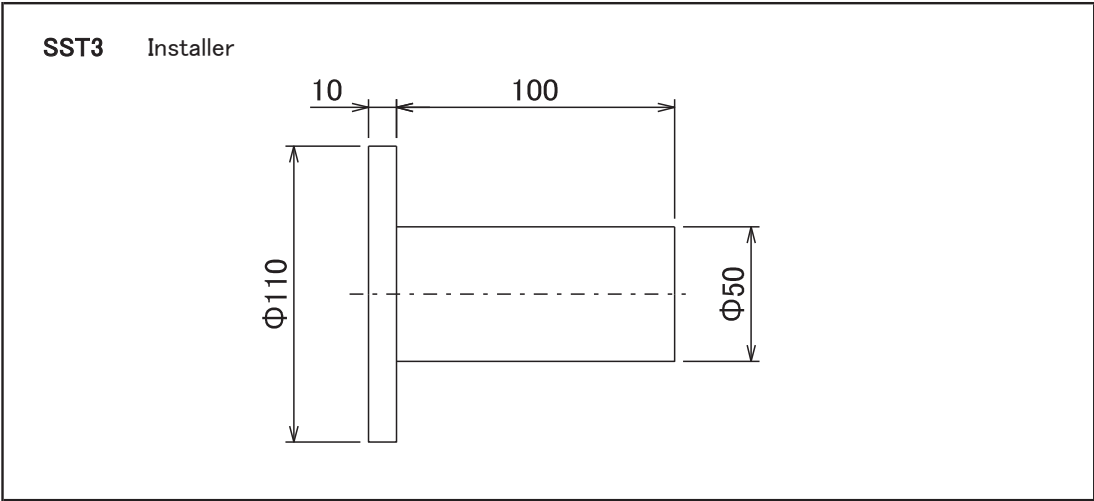
Special tools

SST1 Piston tool



SST2 Installer





Maintenance standards

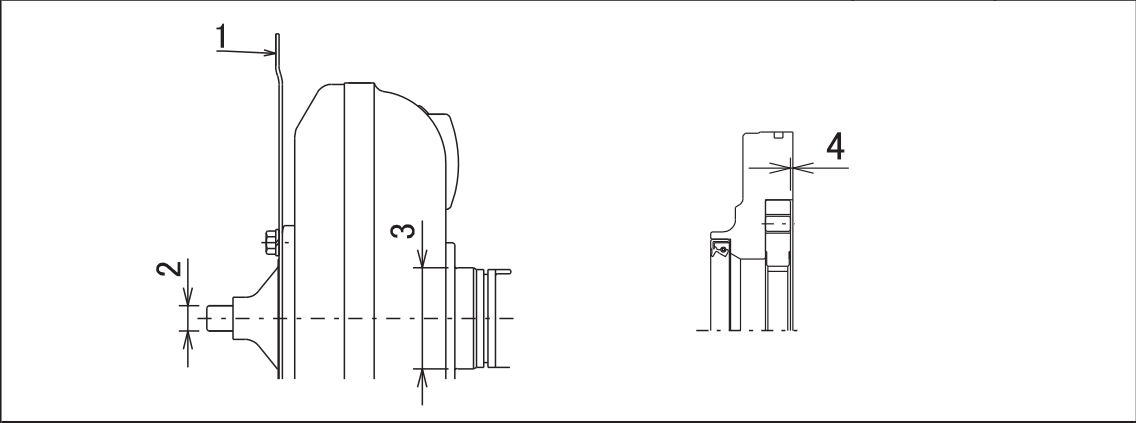
Maintenance check list

A = Standard B = Repair or service limit

Unit: mm

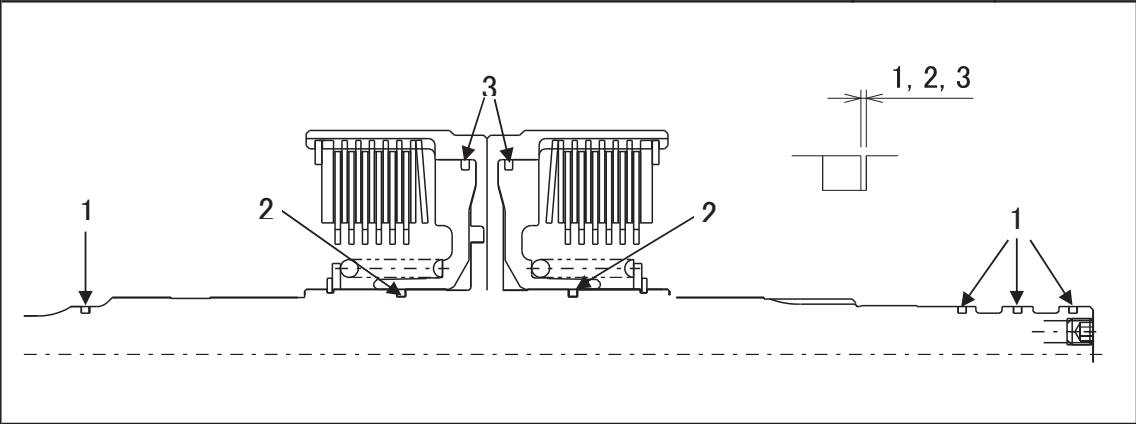
Transmission

Items	A	B
1. Fluctuation of the flexible plate	-	0.5
2. Outside diameter of pilot boss end	15	14.95
3. Outside diameter of the pump boss (sliding surface with the oil seal)	60	59.9
4. Side clearance of the oil pump	0.06 to 0.10	0.12



Clutch pack (Forward & Reverse)

Items	A	B
1. Clearance between width of the seal ring and that of groove	-	0.3
2. Clearance between width of the piston seal ring (inside) and that of groove	-	0.3
3. Clearance between width of the piston seal ring (outside) and that of groove	-	0.3
4. Thickness of the mating plate	1.6	1.4
5. Thickness of the friction plate	2.6	2.4
6. Free length of the return spring (Forward)	45	42.8
7. Free length of the return spring (Reverse)	100	95



Regulator valve

Items	A	B
1. Free length of the spring (main pressure)	95	90

Accumulator valve

Items	A	B
1. Free length of spring (at the accumulator piston) (outside)	100.5	90.5
2. Free length of spring (at the accumulator piston) (inside)	95	85



TRANSMISSION PARTS LIST

Y43340D *SERIAL NO.0001~*

Y43290D *SERIAL NO.0001~*

Y43370D *SERIAL NO.0001~*

Okamura Corporation Jan. 2020

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02-01	OVERHAUL KIT	12

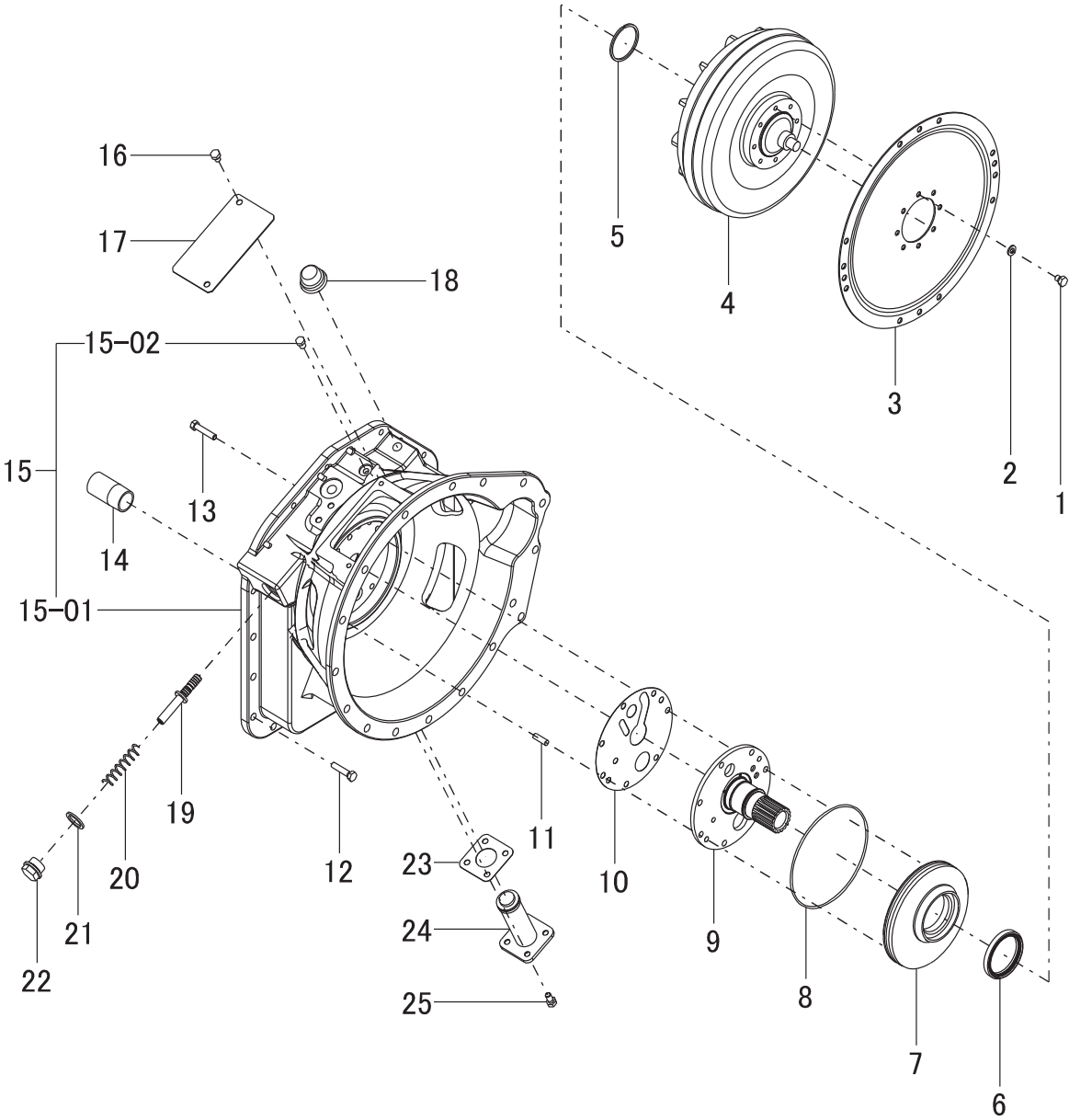
Note.

Parts that there is * sign in the part number column are not supplied as a repair parts.

Parts and Part NO. is subject to change without notice.

01-01-01 TRANSMISSION (PART-1)

-2-

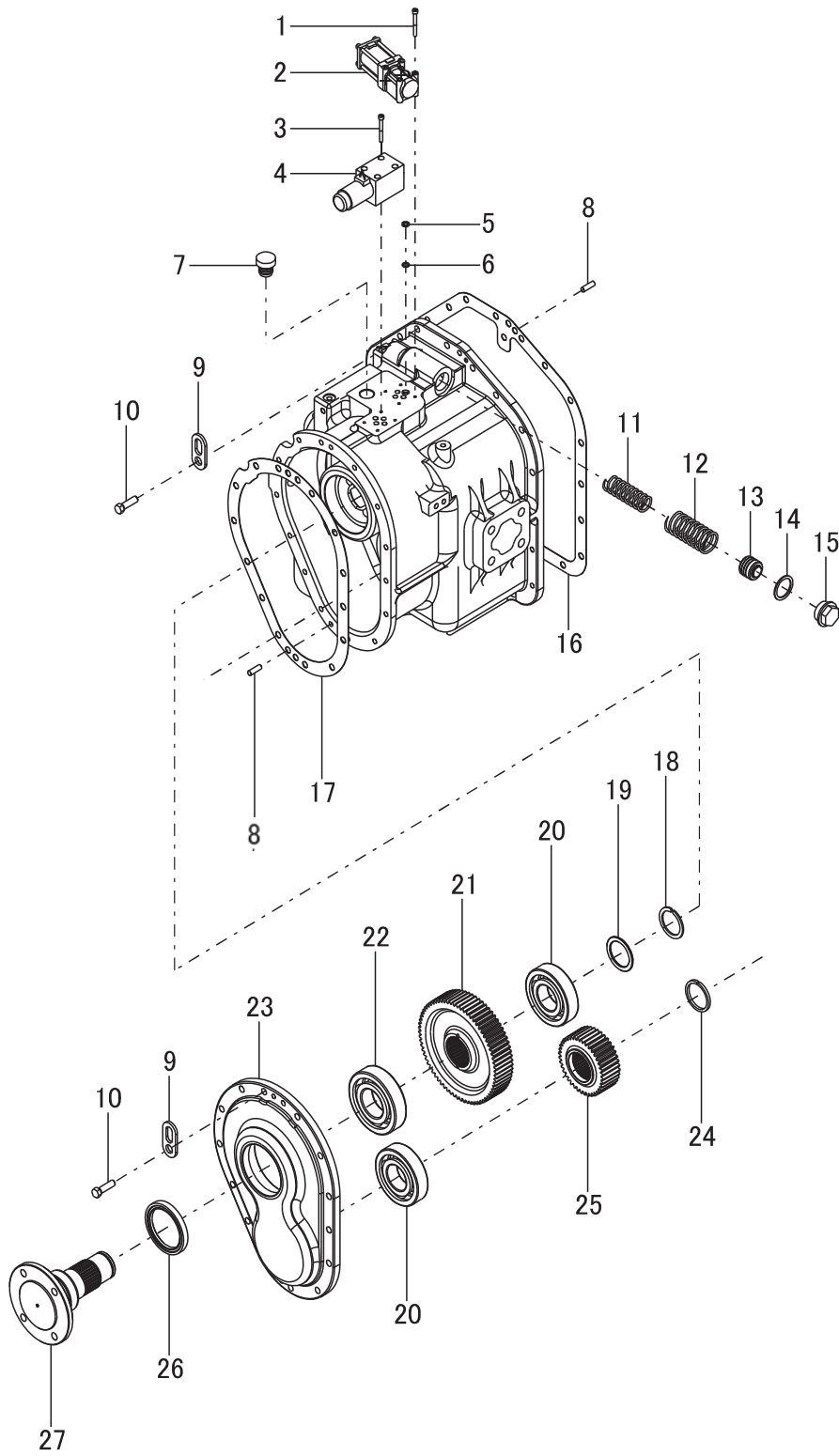


01-01-01 TRANSMISSION (PART-1)

REF. -NO.	PART NO.	PART NAME & DESCRIPTION	Q T Y	MODEL & APPLICABLE SERIAL NO.			
				Y43340D	Y43290D	Y43370D	
				@FROM- -@UPTO	@FROM- -@UPTO	@FROM- -@UPTO	
1	C12414	BOLT	8				
2	C99514	WASHER, SPRING	8				
3	441442A	PLATE, FLEXIBLE	1				
4	470008B	T/C ASSY	1				
5	R61800	RING, SEAL	1				
6	R63030	SEAL, OIL	1				
7	430442A	CASE, OILPUMP ASSY	1				
7 01	*	CASE, OILPUMP	1				NOT SHOWN
7 02	*	DRIVE GEAR ASSY	1				NOT SHOWN
7 03	*	DRIVEN GEAR, OILPUMP	1				NOT SHOWN
8	R62545A	O RING	1				
9	431736A	SHAFT, STATOR	1				
10	432519A	GASKET	1				
11	C54425	PIN	2				
12	C15535S	BOLT, WASHER ASSEMBLED	8				
13	C12440S	BOLT, WASHER ASSEMBLED	7				
14	K62059	NIPPLE	1				
15	440420A	T/C CASE ASSY	1				
15 01	*	CASE, T/C	1				
15 02	K60912	PLUG	1				
15 03	*	BALL, STEEL	2				NOT SHOWN
16	9165340814	BOLT	2				
17	K62028B	COVER	1				
18	R61848	BREATHER	1				
19	591306C	SPOOL, REGULATOR	1				
20	491427A	SPRING, REGULATOR	1				
21	C94624	WASHER, SEAL	1				
22	C93824	PLUG	1				
23	564501B	GASKET	1				
24	564102B	STRAINER, SUCTION	1				
25	C12416S	BOLT, WASHER ASSEMBLED	4				
26	K62067	COVER	3				NOT SHOWN
27	9165340814	BOLT	6				NOT SHOWN

01-01-02 TRANSMISSION (PART-2)

-4-



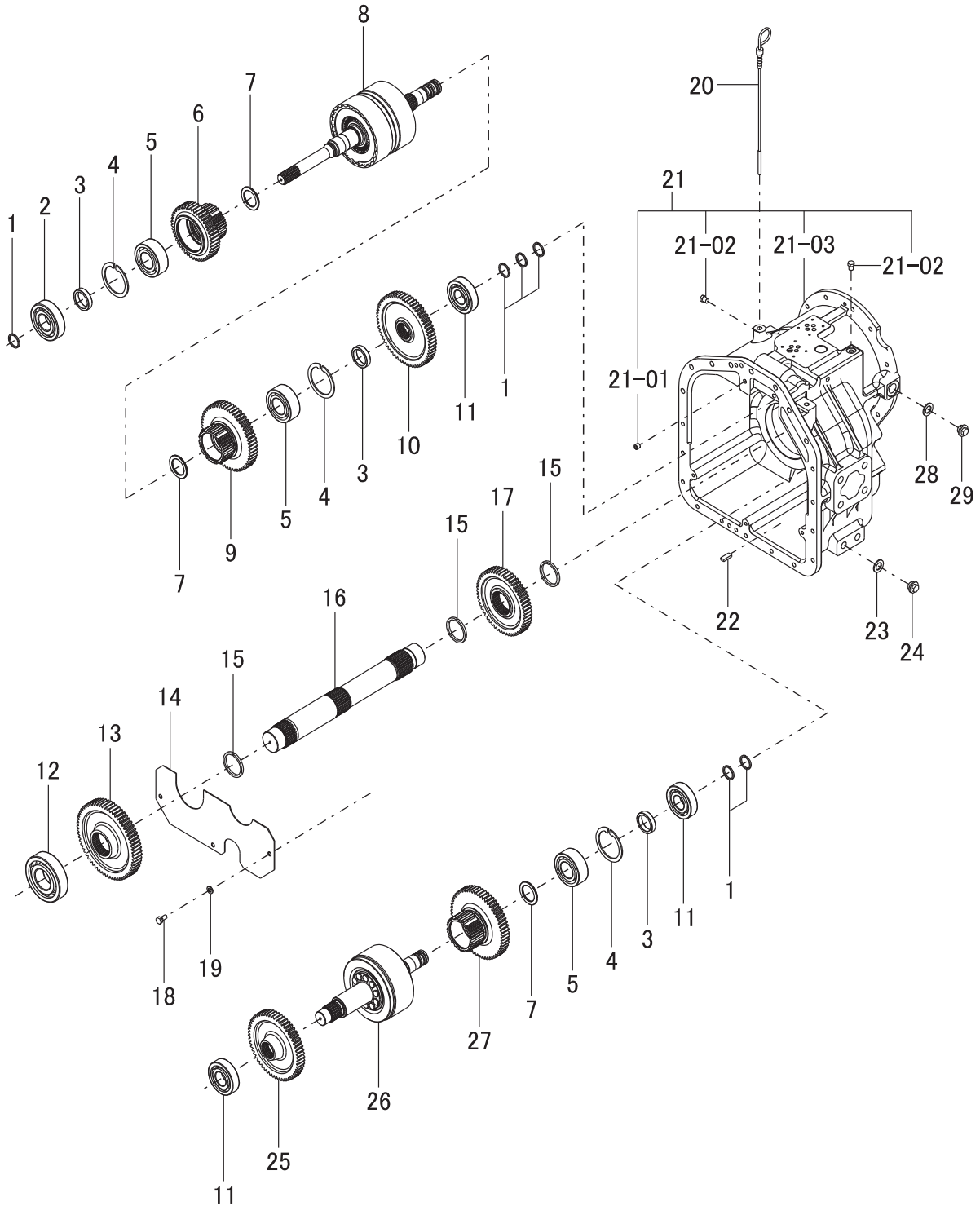
01-01-02 TRANSMISSION (PART-2)

-5-

REF. -NO.	PART NO.	PART NAME & DESCRIPTION	Q T Y	MODEL & APPLICABLE SERIAL NO.			
				Y43340D	Y43290D	Y43370D	
				@FROM- -@UPTO	@FROM- -@UPTO	@FROM- -@UPTO	
1	C29250	HEXAGON SOCKET BOLT	4				
2	490314A	VALVE, SOL ASSY	1				
3	C29245	HEXAGON SOCKET BOLT	4				
4	490309A	VALVE, SOL ASSY	1				
5	R62632	COIN FILTER	1				
6	CP0090B	O RING	1				
7	R63125	CAP, OIL INLET	1				
8	C54425	PIN	4				
9	K60304	PLATE, EYE	3				
10	C15535S	BOLT, WASHER ASSEMBLED	26				
11	493607A	SPRING, ACC INNER	1				
12	493606A	SPRING, ACC OUTER	1				
13	593508C	PISTON, ACC	1				
14	C94633	WASHER, SEAL	1				
15	C93833	PLUG	1				
16	488434D	GASKET	1				
17	488435B	GASKET	1				
18	K62047	RING, SNAP	1				
19	R60916	SPACER	1				
20	C76309	BEARING, BALL	2				
21	484779B	GEAR, OUTPUT	1		-----	-----	
21	484780B	GEAR, OUTPUT	1	-----			
22	C76310	BEARING, BALL	1				
23	481347B	COVER, REAR	1				
24	C95150	RING, SNAP	1				
25	485422B	GEAR, COUNTER	1		-----	-----	
25	485423B	GEAR, COUNTER	1	-----			
26	R63223	SEAL, OIL	1				
27	487539A	COUPLING	1				

01-01-03 TRANSMISSION (PART-3)

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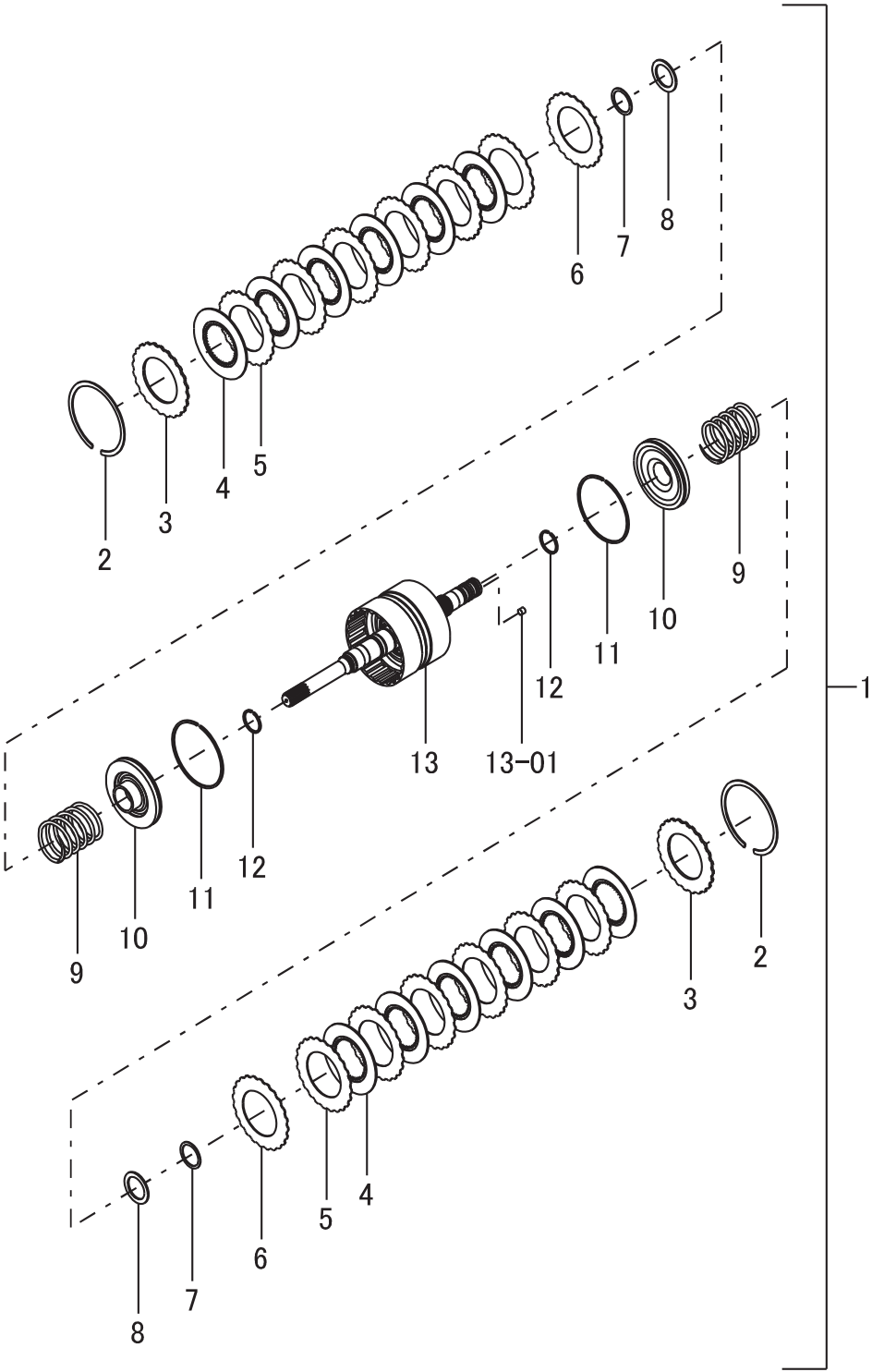
01-01-03 TRANSMISSION (PART-3)

-7-

REF. -NO.	PART NO.	PART NAME & DESCRIPTION	Q T Y	MODEL & APPLICABLE SERIAL NO.			
				Y43340D	Y43290D	Y43370D	
				@FROM- -@UPTO	@FROM- -@UPTO	@FROM- -@UPTO	
1	R63383	RING, SEAL	6				
2	C76307	BEARING, BALL	1				
3	R63174	SPACER	3				
4	C95272	RING, SNAP	3				
5	C75207	BEARING, BALL	3				
6	484159A	GEAR, CLUTCH	1		-----		
6	484156B	GEAR, CLUTCH	1	-----		-----	
7	R63032A	SPACER	3				
8	480253B	F CLUTCH ASSY	1				
9	484160A	GEAR, CLUTCH	1		-----	-----	
9	484157C	GEAR, CLUTCH	1	-----		-----	
9	484161A	GEAR, CLUTCH	1	-----	-----		
10	484529B	GEAR, COUNTER	1				
11	C76306	BEARING, BALL	3				
12	C76309	BEARING, BALL	1				
13	484534A	GEAR, COUNTER	1		-----		
13	484531B	GEAR, COUNTER	1	-----		-----	
14	487019D	COVER, GEAR	1				
15	C95150	RING, SNAP	3				
16	482232A	SHAFT, COUNTER	1				
17	484535A	GEAR, COUNTER	1		-----	-----	
17	484532B	GEAR, COUNTER	1	-----		-----	
17	484536A	GEAR, COUNTER	1	-----	-----		
18	C12420S	BOLT, WASHER ASSEMBLED	3				
20	R63114	GAUGE, LEVEL	1				
21	480163A	T/M CASE ASSY	1				
21 01	K69518	ORIFICE	1				
21 02	K60912	PLUG	3				
21 03	*	CASE, T/M	1				
21 04	*	BALL, STEEL	3		NOT SHOWN		
22	R62824	MAGNET	2				
23	C94616	WASHER, SEAL	2				
24	C93816	PLUG	2				
25	484533A	GEAR, COUNTER	1		-----		
25	484530B	GEAR, COUNTER	1	-----		-----	
26	480257B	R CLUTCH ASSY	1				
27	484158C	GEAR, CLUTCH	1				
28	C94622	WASHER, SEAL	1				
29	C93822	PLUG	1				

01-01-04 TRANSMISSION (PART-4)

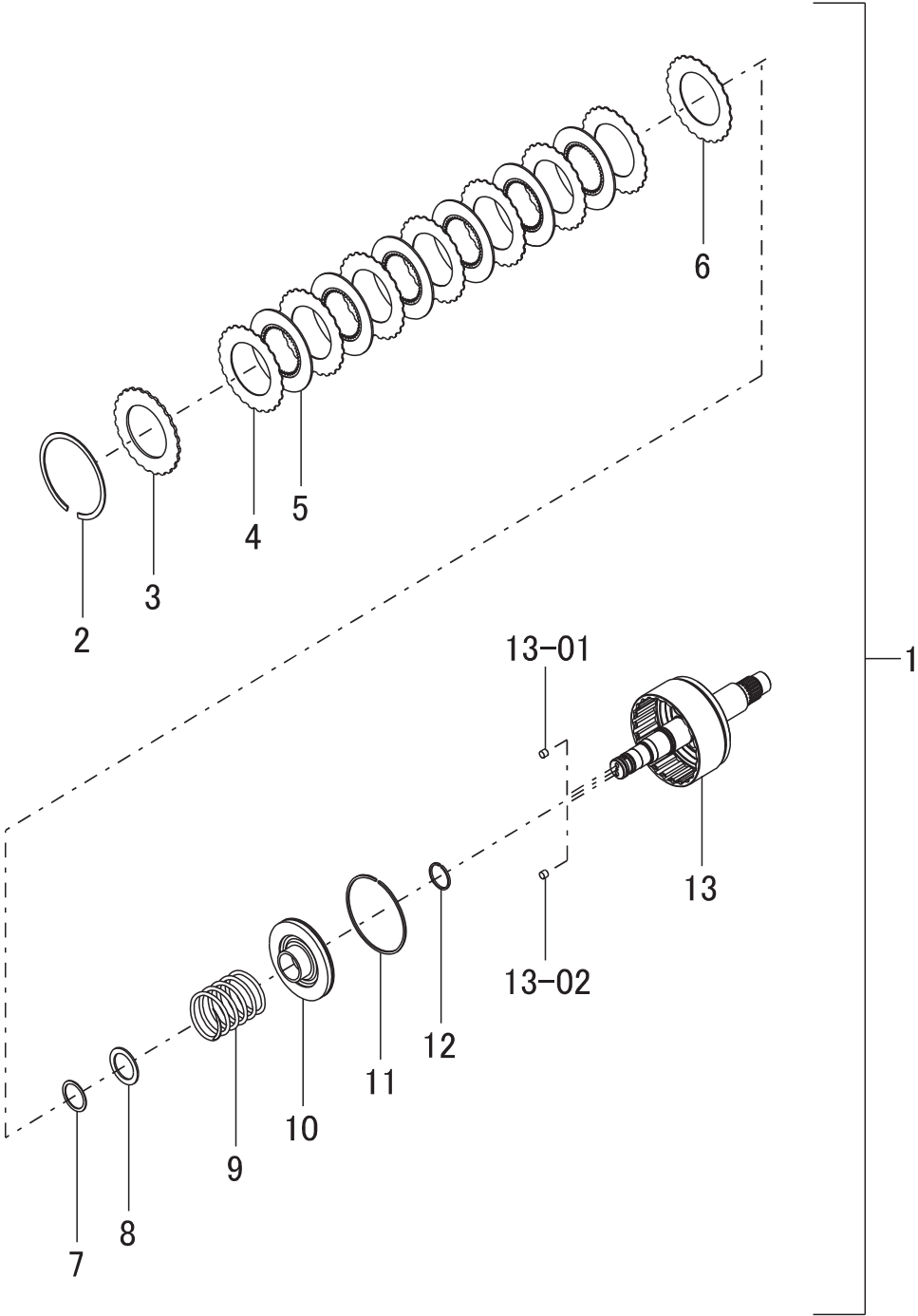
-8-



01-01-04 TRANSMISSION (PART-4)

-9-

REF. -NO.	PART NO.	PART NAME & DESCRIPTION	Q T Y	MODEL & APPLICABLE SERIAL NO.			
				Y43340D	Y43290D	Y43370D	
				@FROM- -@UPTO	@FROM- -@UPTO	@FROM- -@UPTO	
1	480253B	F CLUTCH ASSY	1				
2	*	RING, SNAP	2				
3	*	PLATE, PRESSURE	2				
4	483019A	PLATE, CLUTCH	12				
5	483120A	PLATE, DRIVEN	12				
6	483117A	PLATE, CAMBER	2				
7	*	RING, SNAP	2				
8	*	RETAINER, SPRING	2				
9	*	SPRING, RETURN	2				
10	*	PISTON, CLUTCH	2				
11	*	RING, PISTON	2				
12	*	RING, PISTON	2				
13	*	MAIN SHAFT & DRUM ASSY	1				
13 01	*	PLUG	2				



01-01-05 TRANSMISSION (PART-5)

-11-

REF. -NO.	PART NO.	PART NAME & DESCRIPTION	Q T Y	MODEL & APPLICABLE SERIAL NO.			
				Y43340D	Y43290D	Y43370D	
				@FROM- -@UPTO	@FROM- -@UPTO	@FROM- -@UPTO	
1	480257B	R CLUTCH ASSY	1				
2	*	RING, SNAP	1				
3	*	PLATE, PRESSURE	1				
4	483120A	PLATE, DRIVEN	7				
5	483019A	PLATE, CLUTCH	6				
6	483117A	PLATE, CAMBER	1				
7	*	RING, SNAP	1				
8	*	RETAINER, SPRING	1				
9	*	SPRING, RETURN	1				
10	*	PISTON, CLUTCH	1				
11	*	RING, PISTON	1				
12	*	RING, PISTON	1				
13	*	MAIN SHAFT & DRUM ASSY	1				
13 01	*	ORIFICE	1				
13 02	*	PLUG	1				

02-01 OVERHAUL KIT

-12-

REF. -NO.	PART NO.	PART NAME & DESCRIPTION	Q T Y	PARTS INDEX	
				GRP NO.	REF NO.
1	T60927	OVERHAUL KIT	1		
1 01	R61800	RING, SEAL	1	01-01-01	5
1 02	R63030	SEAL, OIL	1	01-01-01	6
1 03	432519A	GASKET	1	01-01-01	10
1 04	R62545A	O-RING	1	01-01-01	8
1 05	564501B	GASKET	1	01-01-01	23
1 06	564102B	STRAINER, SUCTION	1	01-01-01	24
1 07	R62632A	FILTER, COIN	1	01-01-02	5
1 08	CP0090B	O-RING	1	01-01-02	6
1 09	488434D	GASKET	1	01-01-02	16
1 10	488435B	GASKET	1	01-01-02	17
1 11	R63223	SEAL, OIL	1	01-01-02	26
1 12	R63383	RING, SEAL	6	01-01-03	1